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CASE REPORT

Nutrition assessment of an elderly patient with recurrent advanced carcinoma of the maxilla: A case report

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ABSTRACT

Maxillectomy patients require a maxillofacial prosthesis for improving quality of life from the preoperative period to the stage of palliative care. This case report describes maxillofacial prosthetic treatment from the aspect of nutrition by following the condition of a 69-year-old woman who received surgery for a right-side carcinoma of the maxilla. After the initial treatment, metastatic disease was found, and her nutritional status worsened steadily. Although the prognosis may be poor, maxillofacial prosthodontic treatment should be given in order to maintain nutritional status and quality of life and to achieve optimal function for the patient as palliative care. (*Int J Maxillofac Prosthetics 2020;3:28-31*)

INTRODUCTION

Head and neck cancer patients are at a high risk of malnutrition[1] and swallowing dysfunction.[2] Nutrition is an important consideration in their quality of life,[3] and it is also necessary to complete the treatment procedures for cancer such as surgical therapy, chemotherapy and radiotherapy.[4] To improve quality of life and restore the deficits after maxillectomy, intervention through maxillofacial prosthetic treatment is necessary.[5] However, optimal curative intent treatment, approximately one-half of patients who present with stage III to IV Squamous cell carcinoma of the head and neck will develop disease recurrence,[6] it is important to modify the maxillofacial prosthesis based on the patient's condition to maintain their nutrition status.[7] In particular, radiotherapy to the head and neck area is a frequent cause of oral mucositis and trismus in that patients.[8, 9] Patients experience high rates of psychological distress related to pain and poor ability to speak and swallow, body disfigurement and fears of disease recurrence.[10]

As part of palliative care, prosthetic treatments need to continue to improve the patient's quality of life and psychological care.[11] This case report describes maxillofacial prosthetic treatment from the aspect of nutrition by following the condition of a patient.

CASE REPORT

A 69-year-old Japanese woman with a right-side carcinoma of the maxilla (T4M0N0) was referred to our hospital. The pathological diagnosis was basal cell adenocarcinoma, a rare cancer.[12] Her height was 157 cm and her body weight was 52.2 kg (body mass index [BMI], 21.2) at the first visit. Written informed consent for this case report was obtained from the patient. Assessment of nutrition status included BMI and blood biochemistry (Serum albumin). These assessments were performed from the preoperative period to palliative care period. The evaluation points are 6 days before operation, 4 months after surgery, 1 year after surgery, 1 year and 6

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months after surgery, 2 years after surgery, 2 years and 6 months after surgery, and 2 years and 10 months after surgery, respectively. Figure 1 shows the changes in BMI and serum albumin level and the types of obturator. She had planned a right-side total maxillectomy, left-side partial maxillectomy and a split skin graft (Fig 2). An immediate surgical obturator was fabricated before the operation. The immediate surgical obturator was ligated to maxillary left canine, first premolar, first molar and second molar with stainless steel wire. The base was made with acrylic resins. The maxillary left canine, first premolar, second premolar, first molar and second molar was remained after the surgical resection of the tumor. Two weeks after operation, the condition of maxilla without the obturator is shown in (Fig 3). Three weeks after the operation, the immediate surgical obturator was modified to expand the nasal cavity for obturator (Fig 4). The first definitive obturator was fabricated after the surface had healed 8 months postoperatively. The definitive obturator was designed with double Akers clasp on maxillary left second premolar and maxillary left first molar, occlusal rests and cast circumferential clasps on maxillary left first premolar and maxillary left second molar, and wire clasp on maxillary left canine.

The denture base was made with acrylic resins. However, the patient had recurrence 1 year after the surgery and underwent proton beam therapy for cancer of the nasopharynx. Because of the cancer growth and radiation mucositis, the denture shape was fundamentally altered. Cetuximab was added to radiation therapy for the right cervical lymph node metastasis, 1 year and 4 months after the surgery.

Two years and 3 months passed after the surgery, denosumab and palliative radiotherapy was given to treat bone metastases in the femur. Distant metastasis had occurred, and her weight was decreasing. The second definitive obturator was delivered (Fig 5), and radiation mucositis of the oral cavity temporarily improved, the denture design was almost same as first definitive obturator. However, the cancer began to spread in the oral cavity again, 2 years and 5 months after the surgery. Her trismus was very severe, and mouth opening was limited to about 5 mm from the maxillary left canine to mandible left canine. She could not perform opening and closing movement. She kept her mouth open and her lip could close her own will. She had difficulty inserting and removing the definitive obturator by herself. Around that time, she decided to take a palliative home care.

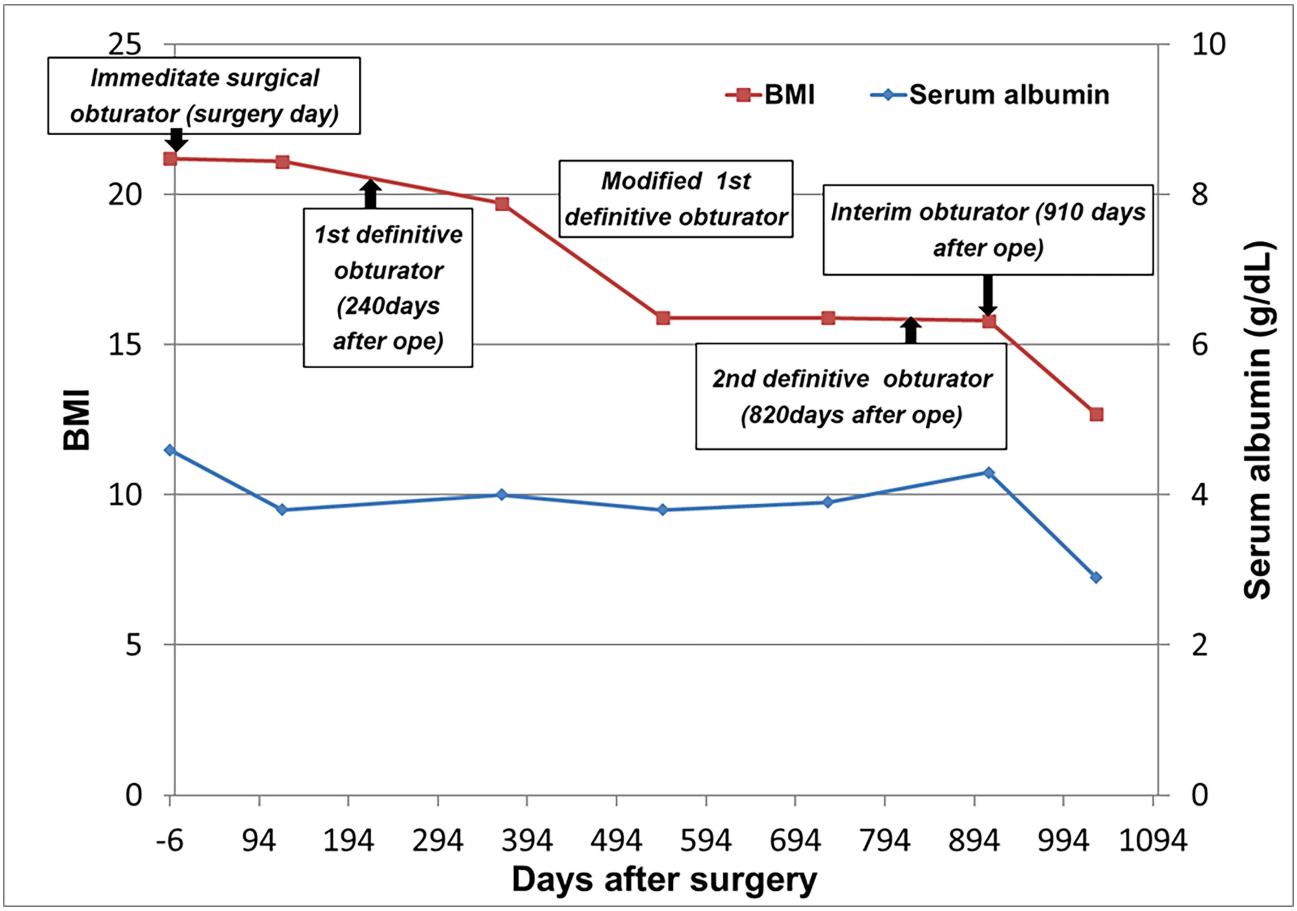

Fig 1. Changes in BMI and serum albumin level during the use of each type of obturator.

The interim obturator without artificial teeth was therefore applied to separate the oral and nasal cavities (Fig 6). The interim obturator was designed to maxillary left canine, maxillary left first premolar, maxillary left first molar with stainless steel wire and the base was made with acrylic resins. It was considered reasonable to support her swallowing function to maintain her nutrition status. And also, it is important for caregivers to manage the interim obturator easily to remove and insert for providing the oral care. She was unable to take oral ingestion without her obturator, therefore she always wore her obturator for oral feeding, and her prosthesis morphology was modified in response to changes in the oral cavity. Three years after surgery, she died of metastatic advanced cancer while wearing an interim obturator.

Fig 2. Before operation.

Fig 3. Two weeks after operation without immediate surgical obturator.

Fig 4. Three weeks after operation with immediate surgical obturator.

Fig 5. After operation with placement of second definitive obturator.

Fig 6. Interim obturator for palliative care.

DISCUSSION

BMI is an indicator of nutritional status often used due to the ease of its calculation, it not being invasive and also not an expensive process. BMI is as interpreted using standard weight status categories for adults ≥20 years old. Current guidelines from the Centers for Disease Control and Prevention and the World Health Organization define <18.5 kg / m²; this patient was categorized as malnutrition. Serum albumin is the most abundant protein in human serum. It has been used for decades as an indicator of malnutrition in patients in clinically stable conditions.[13] Significant loss of muscle

mass has been observed in elderly people with low serum albumin levels.[14] Patients with serum albumin levels below 3.5 g / dl indicate possible protein energy malnutrition. In recent years, it has been recommended to combine multiple indicators in the evaluation of nutritional status. Therefore, there is a possibility that nutritional status can be grasped more sensitively by combining BMI and serum albumin. When the patient used the first definitive obturator, significant malnutrition was not detected. However, her condition worsened, and refractory cachexia appeared with the occurrence of weight loss, severe muscle wasting, low performance status and metastatic cancer refractory to therapy. From the results, it is considered that our prosthetic intervention was able to prevent deterioration of both BMI and Serum albumin and maintain stability except at the terminal stage. During palliative care, the interim obturator provided meaningful support to enable the best possible quality of life. Additionally, the nutrition support team should be involved in nutrition management throughout the continuum of oral cancer care. Maxillectomy patients require improvement in their quality of life through the use of a maxillofacial prosthesis from the operative period to the stage of palliative care. The maxillofacial prosthetic treatment should be selected according to the cancer stage, metastatic status and adverse effects of adjuvant radiotherapy. Although the prognosis may be poor, the maxillofacial prosthesis needs to be modified flexibly based on the patient's needs.

CONCLUSION

This clinical report described maxillofacial prosthetic treatment from the aspect of nutrition maxillofacial prosthodontic treatment should be given in order to maintain nutrition status and quality of life and to achieve optimal function for the patient.

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